U.S. House of Representatives
Committee on Government Reform

Testimony By:

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Chairman Davis, Ranking Member Waxman and Committee Members:

Good afternoon.

My name is John Curran. I am one of the founders of the American Registry for Internet Numbers (ARIN), and have served as Chairman of the Board of Trustees since ARIN's inception in 1998. I would like to thank the Committee for the opportunity to speak regarding the leadership of the United States with respect to Internet Procotol version 6 and hope that the Committee find my comments useful in their deliberations.

First, as background, ARIN is one of the five regional Internet registries ("RIRs") responsible for the management, allocation, and stewardship of number resources in the form of Internet Protocol or IP addresses. ARIN is responsible for much of the North American Region encompassing the United States, Canada, and some portions of the Caribbean. (The other four RIRs are LACNIC (South America/Mexico); APNIC (the Asia-Pacific region); AfriNIC (Africa); and RIPE (Europe). Additionally, ARIN facilitates a bottom up policy development process in which the members of the ARIN Internet community guide the formation of Internet resource allocation policies.

My involvement with the Internet and its administration actually goes back earlier to 1990; since that time I have served as the Chief Technology Officer for three Internet companies including BBN/GTE Internetworking, XO Communications, and most recently ServerVault, a secure managed infrastructure company based in Dulles, Virginia. I also served as an Area Director of the Internet Engineering Task Force (IETF) Operations and Network Management area. As a result of this background, I was selected in 1993 to serve as a member of the Next Generation Directorate of the IETF which led to formation of Internet Protocol version 6. I'd like to briefly review for the Committee the circumstances surrounding the formation of IPv6 as it is relevant to our discussions today.

In 1993, the Internet was experiencing remarkable growth due to the success of the earliest research Internet Protocol (IP) networks and the emergence of the commercial Internet marketplace. One consequence of the success was the concern that the pool of available IP version 4 addresses could be exhausted in the late 2005-2010 timeframe if the growth continued as forecasted.

As a result of this concern, the IETF formed the "IP Next Generation" (IPng) Directorate and charged it with considering requirements for the next version of the Internet Protocol. This directorate and the work of subsequent groups in the IETF led to development of the Internet Protocol version 6 (IPv6), which has larger address size and incorporates technical enhancements for security, performance, and administration. I would direct Members of the Committee to

the recent excellent GAO report (GAO-05-471) on IPv 6 for further background on the topic.

Fortunately, changes in the allocation policies for IPv4 addresses used by the regional Internet registries and the introduction of recovery efforts have further extended the availability of the IPv4 address space. At this time, the earliest estimate of the depletion of the IPv4 address space is 2018, and most estimates are further out in the 2025 timeframe. As a result, there is more than adequate time for most organizations to plan their migration from IPv4 to IPv6, and such a migration is inevitable as the IPv4 address space is finite.

The Internet community has done a remarkable job completing the tasks necessary to enable the deployment of IPv6 throughout the world including the ARIN region. The Internet Engineering Task Force (IETF) established the technical standards several years ago specifying IPv6. The Internet community has been active through research and test IPv6 networks as well as a number of information sharing forums facilitating the migration from IPv4 to IPv6. The regional Internet registries stand ready to allocate IPv6 address space to qualifying organizations and having been doing so for several years. (Please refer to attachment for details.) IPv6 allocations began in 1999 with steady growth through 2002 followed by significant growth in 2003 and 2004, particularly in the RIPE and APNIC regions. Within the ARIN region, there was a slight decline in 2004, however, during the first quarter of 2005 there appears to be a

resurgence of IPv6 allocations. In order to further promote IPv6 deployment, the ARIN Board of Trustees first waived IPv6 fees in 2001 and has continued to extend IPv6 waivers through for qualifying organizations.

While these numbers are very modest compared to the scope of today's Internet, it should be recognized that the transition from IPv4 to IPv6 is for most organizations predicated upon both a comprehensive migration plan as well as successful business case. The formation of these plans will become easier with time and with increased industry adoption of IPv6.

The promotion of IPv6 deployment in the United States would be further enhanced by leadership among federal agencies in preparing for this transition. We have already seen increased IPv6 private sector activity as a result of the United States Department of Defense which has articulated and committed to a IPv4 to IPv6 migration strategy. Having additional federal agencies begin the planning process as recommended in the GAO report would further increase industry activities in the United States, and improve the readiness of the government for this important transition. Government contractors are likely to follow this leadership.

Mr. Chairman, I would like thank you for the opportunity to speak today, and look forward to answering your questions.